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The Diagnosis and Treatment of "Floating Kidney."

BY R. HARVEY REED, M. D., (UNIV. OF PENNA.) COLUMBUS, OHIO.

Professor of Theory and Practice of Surgery and Clinical Surgery, Ohio Medical University ; Consulting Surgeon B. & O. and Big Four Railways,
Surgeon Protestant Hospital, etc.

A paper read by special invitation before the Sixth Annual Meeting of the Shelby County
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REPRINT FROM

COLUMBUS MEDICAL JOURNAL.

APRIL, 1894.



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The frequency of floating kidney, associated with its various complications, together with the errors in diagnosis, certainly warrants our taking up this subject and considering it for a few moments before this Association. The experience of the writer, both as a general practitioner and consultant, has led him to believe that a floating kidney is more likely to be misunderstood and taken for something else than perhaps any other one disease of the abdominal cavity. I have seen floating kidney treated for lumbago, also for sciatic rheumatism ; in another case I saw an able practitioner tap it for ascites, and still another where it was mistaken for an enlarged ovary. On the other hand, I have seen an enlarged and pendant gall bladder filled with gall stones mistaken for a movable kidney and the mistake was not discovered until revealed by an operation. With these few examples under my own observation and occurring in the experience of able practitioners, it is quite evident that the diagnosis of a floating kidney is not always an easy task. In fact, it has been my ex-



perience that the early diagnosis of floating kidney is seldom made, unless the patient is so fortunate as to fall in the hands of an experienced diagnostician. As a rule you are called upon by some practitioner who has treated the patient for months or even years without success, until one or both have become dissatisfied and seek relief, either through counsel or a change in physicians.

By this time you may have had torsion of the renal vessels and nerves and consequently find the patient suffering from lumbar pain, sciatica, or both. On the other hand the patient may be perfectly free from pain, except with more or less frequent paroxysms during which it may be likened to that of a case of renal colic. Not unfrequently the patient, especially if the abdominal walls are thin, will observe a tumor in the peritoneal cavity, which excites attention, although when first discovered it may not cause any special pain. It is not uncommon to find that hydro-, or even pyo-nephrosis may have set in; if the latter, it is not unusual to find it associated with secondary infection in the form of tuberculosis.

The clinical facts have forced us to the conclusion that the symptoms of floating kidney vary in accordance with the conditions which may be associated with it, and which are largely modified by the changes and complications which, as a rule, sooner or later accompany this malady.

It may be considered presumptuous on my part to even attempt a definite diagnosis of floating kidney, when such a noted authority as Agnew, in his *Surgery*, and even Pepper, in the *American Text Book of Medicine*, fail to give it, saying nothing of its omission in the *American Text Book of Surgery*; and yet our little cycle of experience has led us to the belief that it fills a position which is sufficiently important in the diagnosis and treatment of abdominal diseases to justify us in contributing our mite to the study of this disease.

I now imagine I hear some of my collaborators ask: What difference does it make? If you are satisfied there is a tumor in the abdominal cavity, make an excision and find out what it is. It will be time enough then to remove it if you can, or relieve it if you can not do any better, or let it alone if you must.

While we are ready to accede this point to those who are experienced and practical operators, yet the point I wish to make is, that in the majority of cases movable kidney presents itself to the average practitioner who is not experienced in abdominal surgery or the diagnosis of abdominal tumors, who dares not

open the abdominal cavity and look at its contents in order that he may make a diagnosis, but who must resort to text books for his information, and when, as I have already said, these text books fail to give him this instruction, it is our duty, although our experience may be limited, to give him what assistance we can to make an early diagnosis in this class of diseases.

On making an early diagnosis, I believe, hangs the successful treatment of floating kidney. A failure to make an early diagnosis simply means that your patient will take nine chances out of ten of contracting complications which are liable to be so grave as to require nephrotomy or even nephrectomy to relieve them. It is in these neglected cases of floating kidney that you find long-continued severe neuralgias, due to torsion and sub-acute neuritis. It is in these that you find hydronephrosis, due to stenosis of the ureter, which, however, *may* last for weeks, and even months, without serious destruction to the substance of the kidney, as has been demonstrated by the author of this paper by repeated experimental research, but which, sooner or later, unless relieved, is nearly certain to be followed with either cystic degeneration or pyonephrosis tuberculous, or all, either one of which, if allowed to continue for any length of time, not only endangers the patient's life, but will require a nephrectomy, or to say the least, a nephrotomy, to relieve.

DIAGNOSIS.—In making a diagnosis of a movable kidney, we should first consider the predisposition. This is largely governed by sex. Women who have borne children, and especially if they belong to the laboring class, are *particularly* prone to this disease; poorly nourished females contribute their share, whilst age and occupation are important factors. In reference to sex, floating kidney occurs much more frequently in females than in males, although I have seen several cases in males, and one case in a young man who was unusually strong and muscular.

Notwithstanding our text books inform us that floating kidney usually occurs between the ages of 25 and 40, I have seen it occur in a young man under 18, and have found it in women who were past 70.

Occupation unquestionably has a great deal to do with causing floating kidney. The young man I have just referred to was a member of a base ball club and addicted to violent exercise which finally resulted in producing a floating kidney.

Again, washer-women, who expose themselves to heavy strains, are frequently found suffering from this malady, whilst puny females, who lie around the house "studying how to do

nothing," not infrequently become victims of this disease, often by suddenly changing their habits during the presence of a friend, by jumping out of a buggy or over a fence. The same holds true of poorly nourished females who may be suffering from some constitutional disease or marasmus, which may reduce them to such an extent that the least exertion will force the kidney out of its place.

Pressure on the kidney during pregnancy has a tendency to cause displacement, and is not unusually followed by a floating kidney.

It is quite evident in attempting to arrive at a correct diagnosis, that it is of the greatest importance that we carefully study all the predispositions which may lead to the production of a floating kidney, and if possible ferret out the causes which may have been factors in producing it. Having accomplished this, which is comparatively easy, as compared with the differential diagnosis, we are then ready to undertake to distinguish it from other abdominal maladies, which, I am sure, we are willing to admit is not always such an easy task.

If the functions of the kidney have been interfered with by the displacement, the use of the ureteral catheter will be of great service in making a correct differential diagnosis, especially if the congestion has been so great as to produce hematuria. Where this occurs the use of the ureteral catheter will very greatly assist us in arriving at the correct diagnosis.

In making the differential diagnosis between an enlarged and elongated gall bladder and a floating kidney, we must remember that traction upon the tumor, in the case of the gall bladder, will reveal that it is attached to the liver, instead of the lumbar region, whilst traction upon the kidney will demonstrate that it is attached to the lumbar region instead of the liver. As a rule, the difference in texture, where the abdominal walls are not too thick, will enable you to diagnosticate between them; yet, when the gall bladder has very thick walls and is very much distended with semi-liquid bile, and where the kidney is somewhat flabby, it becomes very difficult to differentiate between the two by touch; but as a rule, with the history and the predisposition to guide you, this feature of the diagnosis can be decided. Of course, if it happens to be the left kidney that is affected (which is very unusual), the complications of diagnosis are at once relieved.

Where the gall bladder is involved, it is not unusual to have it associated with jaundice and all its accompanying symptoms and complications. On the other hand, we would not ex-

pect, except in anomalous cases, to find jaundice occurring in the case of a floating kidney. In many cases digital examination will enable you to distinguish the kidney in its natural position on the well side, and its notable absence on the other side. At the same time it is often an easy matter to replace the floating kidney, which, on pressure, will readily slip from under your finger, and either ascend under the margin of the liver, or descend even to the brim of the pelvis; or it may in some cases be pushed over to the median line and assume a position on the abdominal aorta, so that the pulsations of the latter may be distinctly felt underneath the displaced kidney, which may be outlined very distinctly by the aid of these pulsations. Under these circumstances pressure will frequently shut off the circulation to such an extent that the femoral artery cannot be distinguished. It would be difficult to accomplish this with a distended gall bladder. In fact, I have never succeeded in doing so in cases of this class that have come under my observation.

As a rule a displaced kidney is much more sensitive than an enlarged and elongated gall bladder, and whilst the shape may not always enable us to form a correct diagnosis, yet the difference in the outline of the tumor is such that we are guided with considerable accuracy in the direction of a correct differential diagnosis.

The elongation of the right lobe of the liver may complicate the differential diagnosis in this class of cases.

It is only a few days since I was consulted in a case of this kind, in which a lady came to me from the northern part of Ohio with the history of having suffered from a floating kidney for the last seven years. In addition to that, she had a very elongated and "hour-glass" shaped right lobe of the liver. The rest of the liver was apparently normal, but on careful digital examination we were enabled to shoot the kidney up under the elongated lobe of the liver and down below it and by pressing the liver outward and upward we could readily distinguish the kidney, which was also elongated, besides being flattened, evidently the result of pressure from the liver. As a rule, the patient who has a floating kidney is *relieved* when in the prone position, but in this case the pain was increased, owing to the fact that the prone position caused the liver to press upon the kidney and thus increased the pain, and no doubt was largely the cause of the displacement. This patient was admitted to the Protestant hospital and, assisted by Dr. Baldwin, I made the radical operation, when this condition was demonstrated and

the movable kidney sutured fast to the muscles of the back, and the patient is now making a rapid recovery. In this case, however, I am inclined to believe we can hardly expect to secure permanent relief, for the reason that the liver will continue to make pressure on the kidney, which may sooner or later have to be removed.

The differential diagnosis between a movable kidney and the spleen is much more readily accomplished. The location of the spleen being on the left side, is less frequently called into question, owing to the fact that the left kidney is less frequently displaced. But when it is displaced, it is seldom that the spleen assumes a shape that in any respect corresponds to that of the kidney, and very seldom drops down as low in the abdominal cavity. Again, the kidney may be pushed up under the pendent portion of the spleen, which will enable you to readily feel both organs at one time. If, however, the spleen extends down over the kidney, it will be readily distinguished from it by a digital examination, and the kidney will be felt underneath that portion of the spleen which extends in front of it.

The increased mobility of a floating kidney, as compared with that of the spleen, is a ready guide in making a differential diagnosis; so much so, that we can scarcely imagine how it is possible under ordinary circumstances to misconstrue what we are almost warranted in calling positive symptoms pointing to a correct differential diagnosis.

Cancer of the pylorus might possibly be mistaken for a movable kidney, especially when the mesentery is very long and where the cancer assumes the shape and size of a kidney and drops down below the normal position of the kidney, as I have seen it in several cases. Only a few days ago, assisted by Dr. Means, I operated a case of this kind, which had been admitted to the Protestant hospital, of Columbus, in which the cancerous mass was so movable that it could be pushed beyond the median line on the left side and down as far as the kidney on the right side, and could, on the other hand, be pushed up under the margin of the liver or over the large curvature of the stomach. But on careful examination it was found entirely distinct from the kidney which remained stationary, no matter what position the tumor was placed in, saying nothing of the gastric disturbances enabling us to make a clear differential diagnosis. On making a laparotomy it was clearly demonstrated that our diagnosis was correct. A gastro-enterostomy was made with the Senn bone plates and the patient, although 60 years of age, made a rapid recovery without a bad symptom. In these cases

you always have the history of the stomach disturbances, which do not exist, as a rule, in displaced kidney. You have no interference with the urinary secretions, no lumbar pains, no tenderness on pressure of the kidney, whilst you have, as a rule, tenderness on pressure over the cancerous mass.

The principal points which might lead us astray in a case of this kind are the size, shape and location of the tumor, together with its mobility.

Omental tumors, which are quite frequent, might possibly be taken for a movable kidney, but as a rule they are seldom painful except as they produce mechanical pressure, and likewise they seldom interfere with the functions of the kidney, unless it is by mechanical pressure on the ureters producing hydronephrosis. This, however, seldom occurs. Where an omental tumor is movable, it is readily distinguished from the kidney by digital examination and palpation, as the latter will be found in its normal position, whilst the other may be moved around through the different parts of the abdominal cavity seldom, if ever, invaded by the kidney.

A small ovarian tumor, with a long pedicle, might possibly be mistaken for a movable kidney. Comparison between the two would, however, on the one hand enable us to raise the kidney far above a point which would be at all probable in the case of an ovarian tumor, whilst the latter would be found to be anchored in the pelvic region, instead of in the lumbar, as in the case of the former. A vaginal examination would aid in determining the presence of an ovarian tumor, whilst in the case of a floating kidney it would be quite out of the question to force it down to a point where it could be touched with the finger in the vagina.

We must also remember that a movable kidney, in the early stages, is extra-peritoneal, while an ovarian tumor is practically intra-peritoneal, the latter usually having a broad pedicle, which, as we have already said, is anchored in the pelvis, whilst the former has a long, narrow meso-nephron anchored near the median line of the lumbar regions.

TREATMENT.—We have little confidence in the palliative treatment of a floating kidney, as we believe it is the exception that such treatment results in any permanent relief. Experience has taught that efforts at securing relief by palliative treatment are worse than useless. Blisters, liniments, bandages and compresses we look upon, and especially the latter, as actually injurious, and only submit the patient to additional torture with little or no prospects of permanent relief, and are almost certain

to be followed sooner or later by organic disease necessitating nephrotomy and often nephrectomy.

It is our firm belief that the only safe and successful treatment of a movable kidney is a radical operation by which the kidney is replaced and firmly anchored by a number of sutures, which should not only pass through the capsule, but should include a portion of the parenchyma as well as the fascia and muscles underneath.

For accuracy and rapidity of the radical operation for a movable kidney, we would suggest the use of a suture of either chromatinized catgut or silk worm gut, each end of which should be armed with a long, slim needle, varying from six to eight inches in length, according to the patient, the points of which should be triangular. When used, it should be passed through the capsule and the parenchyma of the kidney and directly through the muscles of the back, making its exit through the skin. The second needle should also be passed through the kidney, from one-half inch to an inch distant from the former, and directly through the muscles of the back, making its exit through the skin, the same as its mate. If you desire to let the suture remain, an incision should be made through the skin and the suture tied and the skin stitched over it. If, on the other hand, you desire to remove the suture subsequently, all that is necessary is to tie your sutures on the skin and allow them to remain until you are ready to remove them. This procedure will very greatly simplify the operation, which will require a much smaller opening than where you use a curved needle and attempt to fasten by suturing the kidney and its capsule to the fascia and muscles of the back in the ordinary manner. With the use of the long needle the sutures can be put in very quickly and as many as are necessary to hold the kidney to place, tying them on the patient's back, and closing the abdominal incision. All this can be done in a very few minutes, and I believe it to be equally as efficient and much easier performed than the old method generally in use.

If the patient submits to this line of treatment in the early stages of this malady, before serious complications arise, there is little or no doubt of permanent recovery, and with practically little danger in the operation. On the other hand, where the radical treatment is not resorted to, there is always danger of serious organic disease of the kidney, which may sooner or later prove fatal; or if not, the patient becomes a nervous, suffering, miserable creature, of little benefit to herself or those around her.

150 E. Broad St.

